

In the Claims

1 (currently amended). A method for the production of retinal cells, comprising:

(i) obtaining one or more adult human Müller cells expressing markers of mature Müller cells; and

(ii) culturing the cells in the presence of an extracellular matrix protein and a growth factor to thereby induce dedifferentiation of the Müller cells into a progenitor phenotype; and

(iii) verifying the presence of the dedifferentiated cells.

2 (previously presented). The method according to claim 1, wherein the extracellular matrix protein is fibronectin and the growth factor is epidermal growth factor.

3 (cancelled).

4 (currently amended). ~~The method according to claim 1, further comprising~~ A method for the production of differentiated cells, comprising:

(i) obtaining one or more adult human Müller cells expressing markers of mature Müller cells;

(ii) culturing the cells in the presence of an extracellular matrix protein and a growth factor to thereby induce dedifferentiation of the Müller cells into a progenitor phenotype;

(iii) verifying the presence of the dedifferentiated cells; and

(iv) culturing the dedifferentiated cells in the presence of an extracellular matrix protein and a differentiation agent, to thereby induce the dedifferentiated cells to adopt a specific differentiated cell phenotype.

5 (previously presented). The method according to claim 4, wherein the extracellular matrix is selected from the group consisting of matrigel, fibronectin, collagen, and laminin, and the

differentiation agent is selected from the group consisting of fibroblast growth factor-2, retinoic acid, 3,3',5-Triiodo-L-Thyronine, insulin, insulin-like growth factor, and transforming growth factor β .

6 – 16 (cancelled).

17 (new). The method according to claim 1, wherein said verifying of (iii) comprises antibody-based detection.

18 (new). The method according to claim 4, wherein said verifying of (iii) comprises antibody-based detection.

19 (new). The method according to claim 4, further comprising (v) verifying the presence of the cells having a specific differentiated cell phenotype.